

Programmatic BA Template

Executive Summary

This Biological Assessment (BA) documents the potential effects on federally proposed, candidate, threatened or endangered species and designated critical habitat that could result from proposed vegetation management project and associated activities as documented in the Moon Resource Management EA (USDA FS 2010). The BA tiers to the Programmatic Biological Assessment for the revision of the Forest Plan (USDA Forest Service 2004, pp. 6-7) and provides more specific information on site-specific effects of the project to threatened and endangered species.

The findings (determination of effect) of the BA are summarized in Table 1 below.

Table 1. Determination of Effect of alternatives for the Moon Resource Management EA				
Species	Alt A	Alt B	Alt C	Rationale
Canada lynx	Not likely to adversely affect	Not likely to adversely affect	Not likely to adversely affect	Habitat for snowshoe hare would be maintained at an adequate level and red squirrel habitat would be improved over existing condition. Key thresholds of disturbance would not be met within LAUs that intersect the project area. Projected road density reductions would potentially improve lynx habitat under all alternatives.
Gray Wolf	Not likely to adversely affect	Not likely to adversely affect	Not likely to adversely affect	Habitat for prey would be maintained or improved. Projected road density reductions would potentially improve wolf habitat under all alternatives.

1.0 Introduction

This Biological Assessment (BA) documents the potential effects on federally proposed, candidate, threatened or endangered species and designated critical habitat that could result from proposed vegetation management project and associated activities as documented in the Moon Resource Management EA (USDA FS 2010, in prep).

This BA was prepared in compliance with the requirements of Forest Service Manual Directives sections 2670.31, 2670.5(3), and 2672.4, the Endangered Species Act of 1973 as amended, and the National Forest Management Act of 1976.

Information provided by the USDI Fish and Wildlife Service (USDI FWS 2010. Letter from Field Supervisor Tony Sullins, January 5, 2010) confirms the species and critical habitat that should be considered for projects conducted on the Chippewa National Forest:

- Canada lynx (threatened), with no designated critical habitat
- Gray wolf (threatened), with no designated critical habitat

2.0 Consultation with USDI Fish and Wildlife Service

The Forest Service has initiated consultation with the Fish and Wildlife Service seeking concurrence with the determination of effects in this BA, which concludes that No Action (Alternative A), the proposed action (Alternative B), and Alternative C may affect, but are not likely to adversely affect the Canada lynx and the gray wolf.

In addition to consultation for the Canada lynx and gray wolf requested for this project, programmatic consultation was recently undertaken for Forest Plan revision. The history of this consultation is documented in the Programmatic Biological Assessment for the revision of the forest plans (USDA Forest Service 2004, pp. 6-7). The relevance of program-level consultation to this project includes those agreements between the Forest Service and the Fish and Wildlife Service reached on defining elements of species' ecology and biology, risk factors and general effects, analysis parameters, monitoring, and management direction in the revised Forest Plan. The BA provides more specific information on how relevant information in the program-level BA is incorporated. Additionally, other factors relevant to this project not discussed in detail in program-level consultation will be discussed in detail in this BA.

Consultation specific to the Moon Project is documented in the project file.

3.0 The Proposed Action:

Location:

The project area encompasses an area on the far east side of the Chippewa National Forest, in the Walker and Deer River Ranger Districts. The southern project boundary follows the Forest boundary along T143N, R27, 26, 25 W. Beginning with the southwest project corner, the project boundary runs through T141N, R27W east to T141N, R25W, and then north to T143N, R. 26 W. County Roads 129 and 65 roughly follow a diagonal west boundary, from T143N R26W to T141N, R27W. The project area encompasses

69,256 acres and lies outside the boundary of the Leech Lake Band of Ojibwe Reservation. National Forest System managed lands total approximately 39,736 acres of the project area. See Appendix A for Vicinity and Project maps.

Table1-1. Moon project area and ownership acres.

Ownership	NFS	State	Cass Cty	Other
Acres	39,736	4,416	10,532	14,572
Source: Corporate database ownership coverage, acreage is further generalized from GIS layers and may result in some variation from actual acres. 2008-10-23 ownership GIS data. Project wide, large water bodies cover over 5,200 acres; all surface water covers 7,360 acres.				

Ecological Setting:

The project area includes four Landscape Ecosystems: Boreal Hardwood Conifer (BHC), Dry Mesic Pine (DMP), Mesic Northern Hardwood (MNH), and Tamarack Swamp (TS). Table 2 shows NFS landscape ecosystem acres, all landscape ecosystem project area (PA) acres and percents for each.

Table 2. NFS landscape ecosystem acres and all landscape ecosystem project area acres.

LE	Description	NFS acres ¹	All acres ¹
BHC - Boreal Hardwood Conifer	Historically - mixed stands composed of aspen, paper birch, balsam fir, and northern white cedar, with some white pine, red pine, ash, basswood, bur oak, white spruce, elm, etc.	1,436	3,055
DMP - Dry Mesic Pine	Historically, red pine and white pine supercanopy with red maple and paper birch subcanopy.	10,161	14,914
MNH - Mesic Northern Hdwd	Historically, canopy dominated by sugar maple, basswood, and paper birch.	17,692	32,324
TS* - Tamarack Swamp	Tamarack dominant with a abundance of black spruce; includes some uplands with aspen, spruce/fir, pine, etc.	10,063	18,974
TOTAL LE Acres		39,348	69,256

*TSF in Forest Plan

¹ acreage is generalized from GIS layers

The project area includes two Chippewa NF Forest Plan Management Areas. These are: the General Forest Management Areas and Riparian Emphasis.

Patch size, edge, and forest or habitat fragmentation are elements of the spatial distribution of forest vegetation which affect wildlife, plant communities, and ecological function. The Moon project area is comparatively more fragmented, has more edge habitat, and has less interior forest than other areas of the Chippewa National Forest. Forest Plan objectives for forest spatial patterns include maintaining or increasing the

acres and number of large mature/older forest patches and increasing the amount of interior forest.

Forest Plan objectives include maintaining, protecting, or improving habitat for threatened, endangered, or sensitive (TES) species (Forest Plan, O-WL-17, p.2-28), specifically for the northern goshawk, goblin fern, Canada yew, and bald eagle. In addition, Forest Plan objectives contribute to the conservation and recovery of Canada lynx and gray wolf (Forest Plan, D-WL-3, item c; pages 2-24 – 2-25). Maps for the location of the project and proposed activities are found in Appendix B of the Moon EA.

Overview of species' Affected Environment:

Lynx	Percent of Project Area (all ownerships combined)	Percent of Project Area (Forest Service only)
LAU 20	36%	21%
LAU 21	64%	36%
Wolf		
Zone 1	0	0
Zone 2	0	0
Zone 3	0	0
Zone 4	100%	100%

Other relevant setting features:

- **Proposed action and Alternative summary**

The USDA Forest Service Chippewa National Forest proposes to conduct a variety of resource management activities. The proposed action (Alternative B) and its 2 alternatives are described in the Moon Resource Management EA, section 2.2, and proposed mitigations are listed in section 2.5.

The action alternatives, Alternatives B and C, would conduct a variety of resource management activities directly addressing the purpose and need. All activities will incorporate consideration of tribal interests as required by Forest Plan direction. These considerations may result in mitigations, design criteria, a range of alternatives considered, or other applicable direction.

Management activities include harvest and associated reforestation activities, wildlife opening maintenance, and road management (Table 2). Vegetation management includes harvest and reforestation activities aimed at contributing to purpose and need statements.

Commercial harvest treatments are proposed on approximately 2,643 acres with an estimated volume of 36,382 CCF in Alternative B and approximately 3,255 acres with an estimated volume of 41,771 CCF in Alternative C. About 1.2 miles of temporary roads would be built in Alternatives B and C to access some of these treatment units.

Alternative A, No Action, would result in no direct manipulation of vegetation or active management of the road system.

The existing high standard (OML 3-5) road density, at 0.65 miles/square mile, would remain unchanged among all alternatives. Alternatives vary in how they affect lower standard roads.

Alternative C was developed to address the desire of some people who commented during scoping to conduct more harvest and produce more timber volume, while at the same time others requested fewer activities that would fragment large blocks, conduct clear cut harvest, that would affect sensitive species, or conduct management that is incompatible with State of MN Areas of Biodiversity Significance.

The types of activities between alternatives B and C are the same, though the amounts of certain harvest practices and how they are aggregated on the ground differ between alternatives (Table Alternatives-1).

Table Alternatives-1. A comparison of activities proposed in the Moon Project area by alternative.			
Activity	Alt. A	Alt. B	Alt. C
Vegetation Management (acres):			
Coppice with Reserves	0	650	650
Clearcut with Reserves	0	121	121
Patch Clearcut	0	52	52
Shelterwood	0	445	445
Single Tree Selection	0	625	625
Group Selection	0	221	221

Table Alternatives-1. A comparison of activities proposed in the Moon Project area by alternative.			
Thinning	0	535	1141
Wildlife Opening Maintenance	0	93	93
Transportation Management (miles):			
Miles of system road obliteration	0	About 8.7	About 8.7
Miles of system roads recommended to open to all vehicles	0	About 8	About 10
Miles of system roads open only to snowmobiles	0	0	About 7
Miles of system roads recommended to close to all vehicles	0	About 17	About 8
Temp road construction	0	1.2	1.2
¹ Removal of a road from NF system and apply activities that result in the stabilization and restoration of unneeded roads to a more natural state (36 CFR 212.1), including decommissioning. ² “system” roads are those that are recognized by the FS to serve the NF system ³ the act of eliminating the functional characteristics of a travelway and the reestablishment of natural resource production capability, with the intent to make the corridor unusable as a road or trail. ⁴ roads on NF system land that are not managed as part of the transportation system including unplanned roads, user developed trails that have not been designated and managed as a trail; roads once under permit and were not obliterated upon the termination			

- **Purpose of the action:**

The purpose of the Moon Resource Management Project is to move existing resource conditions in the project area toward desired conditions identified in the Chippewa National Forest 2004 Land and Resource Management Plan (Forest Plan). The need for action is that some existing conditions do not show progress toward meeting the desired conditions identified in the Forest Plan. All forest management alternatives and activities would (1) maintain, protect, or improve habitat for threatened, endangered, or sensitive species and (2) incorporate tribal cultural resources, values, needs, interests, and expectations.

Management activities would restore ecological processes and components, improve or protect watershed conditions, and help maintain or improve social and economic well-being. Vegetation management activities would move existing vegetative conditions towards identified Forest Plan objectives and desired conditions for vegetation composition, age class, structure, diversity; forest health, fire, and wildlife habitat.

Some management opportunities apply to specific LEs. If not specifically limited to certain LEs, management activities apply to all LEs throughout the project area.

Move current vegetation conditions toward long-term desired conditions for structure, age, spatial patterns, and long-term diversity. Vegetation management opportunities include:

- Contribute to the 0-9 age class through clearcut and shelterwood harvests.
- Increase upland conifer forest type in the DMP, MNH, and TS LEs by converting acres to white pine and spruce-fir.
- Decrease aspen by converting it to other forest types in the DMP, MNH, and TS LEs.
- Decrease or maintain northern hardwoods in MNH, DMP and BHC LEs.
- Increase amounts of multi-age forest vegetation communities.
- Maintain or increase the acres and numbers of mature or older upland forest in patches 300 acres or greater.
- Improve growth and vigor of plantation origin red pine, increase or maintain within stand species diversity, and begin to create more natural spacing and structure within plantation origin red pine stands.

Improve or protect watershed conditions. Opportunities to maintain or improve riparian health and function through vegetation management activities and through management of the Chippewa National Forest's road and trail system include:

- Riparian acres maintained or improved.
- Obliterate or close system roads that impact soil and water resources and are not needed in the National Forest road and trail system.

Maintain, protect, or improve wildlife habitats.

- Maintain forest openings to provide a habitat component for white-tailed deer, woodcock, and hunting opportunities.
- Contribute to early successional forest habitat.

Provide commercial wood for mills in northern Minnesota.

Manage roads in the Forest Road system and recommend changes in the uses of these roads to Forest Supervisor.

- Recommend changes to the 2007 Off Highway Vehicle Road Travel Access Decision made by Forest Supervisor Rob Harper.

Improve the safety and economy of National Forest System roads and trails.

- Recommend improvements/possible replacement of the Laura Lake bridge.

- **Time frame of the action:**

It is anticipated that all management activities proposed in this EA will be completed within 5 – 10 years of the date of decision on the EA.

- **Project activities analyzed in program-level BA**

Proposed actions	Alt. A	Alt. B	Alt. C	Addressed in Program-level BA?
Timber harvest		X	X	yes
Conversion of forest types		X	X	yes
Planting, seeding, release and seedling protection		X	X	yes
Site prep, slash treatment		X	X	yes
Wildlife opening maintenance		X	X	yes
Temp road construction		X	X	yes
Road decommissioning		X	X	yes

4.0 Status of the Species

Gray Wolf

Ecology (see section 3.3 of program-level BA)

- Breeding habitat: no new information
- Home range and dispersal: no new information
- Diet: no new information

Population Status (see section 3.4 of program-level BA)

- North America and Minnesota: A report on the distribution and abundance of the wolf in MN was published by Erb (2008) (http://files.dnr.state.mn.us/fish_wildlife/wildlife/wolves/2008_survey.pdf)
- Chippewa National Forest: no new information
- Summary of wolf mortality in Minnesota: no new information

Population Status in Project Area:

- Project site-specific surveys: There have been no site-specific surveys for the wolf.
- Known occurrences: Wolves are known within the project area, however exact numbers are not known. Wolves have been observed or heard in and

near the project area. Most suitable habitat within the wolf's range in Minnesota is thought to be occupied. This project area is included within the wolf's range.

Factors Affecting Wolf Environment

- Prey habitat: no new information
- Human access: Legal and illegal ATV access to wolf habitat is widespread and increasing within the Chippewa National Forest. The number and location of all illegal ATV trails is unknown, but they can be found in nearly every project area across the Chippewa.
- Other factors: no new information

Canada Lynx:

Ecology (see section 4.3 of program-level BA)

- Home range and dispersal: no new information
- Diet: no new information
- Den site selection: no new information
- Mortality: no new information
- Inter-specific relationships with other carnivores: no new information
- Population dynamics: no new information

Population Status (see section 4.4 of program-level BA)

- North America: no new information
- Minnesota: Breeding by successive generations of lynx has been documented on the Superior National Forest, MN.
- Chippewa National Forest: no new information
- Minnesota's lynx-hare cycles: no new information

Population Status in Project Area:

- Project site-specific surveys: No project specific surveys have been completed.
- Known occurrences: There are no known occurrences for the lynx within the project area.

Factors Affecting Lynx Environment (see section 4.5 of program-level BA)

- Roads and trails: Chippewa Forest Supervisor Rob Harper signed the 2007 Off Highway Vehicle Road Travel Access Decision. The purpose was to identify designated roads for off highway vehicle use on the CNF in concert with the goals and objectives outlined in the Forest Plan and to comply with the 2005 Travel Management Rule that requires a designated route system for motor vehicle use by vehicle class and if appropriate, by time of year.
- Winter dispersed recreation: no new information
- Trapping and shooting: no new information

- Vehicle collisions: no new information
- Other factors: no new information

5.0 Affected Environment and Environmental Consequences

GRAY WOLF:

A. Analysis Area:

- **Direct/Indirect Effects Analysis Area:**

Habitat indicators: National Forest land within the Moon project area.

Human Disturbance indicators: LAUs that intersect the Moon project area.

- **Cumulative Effects Analysis Area:** All ownerships within the Moon project area.

Rationale: Allows ready consideration of Forest Plan standards and guidelines.

B. Effects Analysis:

- **Identify and analyze the direct and indirect effects of the action and the cumulative effects of other actions in the project area.**

Indicators

Forest Plan BA Indicator	Use?	Rationale for exclusion
1. Acres and percent of young upland forest <10 years old	Y	
2. Acres and percent of upland conifer (spruce and pine) > 9 years old on all uplands	Y	
3. Miles of RMV trails	N	No change between alternatives
4. Cross-country use policy for RMVs	N	No change between alternatives
5. Miles of temp and OML 1 roads	Y	
Other Indicators		Rationale for inclusion
EX: 6. Miles of roads open for ATV use (federal OML 1 and 2, und, uatv)	N	
EX: 7. Miles of unclassified, OML 2 and OML 3-5 roads in the project area. (und, uatv,	N	

OML 2-5)		
EX: 8. Acres and percent of aspen-birch forest < 29 years old	N	
EX: 9. Acres and percent of deer thermal cover (upland and lowland conifers of appropriate forest types/ages)	N	

Existing Conditions and Effects

(note: See the Canada lynx analysis for a discussion of road effects and conditions. These effects also apply to the wolf.)

Indicators	Existing Condition		Alt A No Action		Alt B		Alt C	
	acre	%	acre	%	acre	%	acre	%
1. Acres and percent of young upland forest <10 years old (National Forest only)	1816	6.6%	192	0.7%	1125	4.0%	1125	4.0%
2. Acres and percent of upland conifer (spruce and pine) > 9 years old on all uplands (National Forest only)	3323	97%	3399	99%	3298	96%	3298	96%
Note: percentage of upland forest is based on 27713 total acres. Percentage of upland conifer forest is based on 3420 total acres.								

Indicators	Existing Condition	Alt A (No Action)	Alt B	Alt C
5. Miles of temp and OML 1 roads	51.2 miles	35.3 miles	21.8 miles	21.8 miles
Data source: GIS Data runs for Moon Project, 5/2010, project record Other Footnotes:				

C. Consistency with Forest Plan:

Forest Plan Guidance	Summary of Direction (see Forest Plan)	Alternatives In Compliance	Basis for Compliance	Remarks
O-WL-4	Maintain or improve habitat for T&E spp.	A, B, C	Adequate habitat is maintained, road density is reduced.	
O-WL-5	Seek opportunities to benefit T&E spp.	A, B, C	Road density is potentially reduced under all alternatives	
O-WL-6	Reduce or eliminate adverse effects to TE spp.	A, B, C	Road density would be potentially reduced under all alternatives	
O-WL-7	Minimize building or upgrading roads in TE areas	A,B, C	Road standards are maintained, no new permanent roads would be built.	
O-WL-17	Promote the conservation and recovery of gray wolf	A, B, C	Adequate habitat is maintained, road density would be potentially reduced.	
S-WL-4	Management will be governed by Gray Wolf Recovery Plan	A,B,C	All alternatives would potentially reduce road density and maintain adequate habitat.	
G-WL-10	Provide for the protection of known active den sites	N/A	No den sites are known.	

D. Determination of Effect

Alternative	Determination	Summary of Rationale
Alternative A	Not likely to adversely affect the gray wolf or its habitat.	Habitat would remain unchanged, but recent decisions would reduce road densities for both system roads and unclassified roads.

Alternative B	Not likely to adversely affect the gray wolf or its habitat.	Habitat for prey would be maintained or improved. Potential road density reductions may improve habitat.
Alternative C	Not likely to adversely affect the gray wolf or its habitat.	Habitat for prey would be maintained or improved. Potential road density reductions may improve habitat.

CANADA LYNX:

A. Analysis Area:

- Direct/Indirect Effects Analysis Area:** *Habitat indicators:* LAUs 20 and 21 (LAUs intersected with the Moon Project area)
Human Disturbance indicators: LAU 20 and 21 (LAUs intersected with the Moon Project area)
- Cumulative Effects Analysis Area:** LAUs 20 and 21 (LAUs intersected with the Moon Project area)
Rationale: Meets LCAS direction, allows comparison with scope of analysis at Forest Plan EIS level, and allows ready consideration of Forest Plan standards and guidelines.

Table Lynx-1 provides a list of all Lynx analysis units (LAUs) that overlap the Moon Project area. The LAUs that will be affected by this project are LAUs 20 and 21.

Table Lynx-1. Acres and Percent of each Lynx Analysis Units (LAU) within the Moon Project Area.			
LAU	Gross Acres	Acres of LAU in Project Area ¹	% of LAU in Project area
20	50,610	25050	49%
21	51,078	44198	87%
¹ Data source: <u>GIS Data runs for Moon Project, 5/2010, project record</u> Other Footnotes:			

B. Effects Analysis:

- Identify and analyze the direct and indirect effects of the action and the cumulative effects of other actions in the project area.

Existing Conditions and Effects

Forest Plan BA Indicator	Use?	Rationale for exclusion
1a. Snowshoe hare habitat acres	Y	
1b. Percent of unsuitable habitat on NFS land	N	Addressed in indicator 12
2. Acres of red squirrel habitat	Y	
3. Denning habitat in patches > 5 acres	Y	
4. Percent of lynx habitat in LAUs with adequate canopy cover- upland forest > 4 years old and lowland forest > 9 years old	N	Addressed in indicator 11
5. Miles of ATV trails allowed	N	Not affected by the project
6. Miles of snowmobile trails allowed	N	Not affected by the project
7. Miles of temp and OML 1&2 roads	Y	
8. Policy on cross-country use of ATVs and snowmobiles	N	Not affected by the project
9. Policy on use of ATVs and snowmobiles on OML 1&2 roads	N	Not affected by the project
Other Indicators		Rationale for inclusion
11. Acres and % of lynx habitat currently unsuitable on all ownerships	Y	Replaces Indicator 4
12. Cumulative change to unsuitable condition on NFS lands.	Y	Replaces Indicator 1b
13. Miles of roads to be decommissioned and new OML 1 roads to be closed on NFS lands	Y	Demonstrates effects of action alternatives
15. Road and compacted trail density on all ownership.	Y	Demonstrates effects of action alternatives and provide information to examine G-WL-8

Lynx Habitat – Forest Condition Indicators Summary

All LAUs within the project area would remain below 30% in an unsuitable condition for all alternatives and would meet Forest Plan Guide G-WL-3.

Alternatives B and C in the Moon Project would change 935 acres of lynx habitat to an unsuitable condition (Table Indicator 12). Cumulative amounts of change to an unsuitable condition would remain below 15% for all LAUs within the project area and would meet Forest Plan Standard S-WL-1 for the Canada Lynx.

Habitat for prey (red squirrels and snowshoe hare) are maintained or improved under all alternatives. Denning habitat is improved under all alternatives.

Indicator 11: Currently Unsuitable Lynx Habitat on all ownerships

This indicator provides a measure of G-WL-3 which states “limit disturbance within each LAU on NFS lands as follows: if more than 30% of the total lynx habitat (all ownerships) within an LAU is currently in unsuitable condition, no further reduction of suitable condition should occur as a result of vegetation management activities by National Forest.

Indicator: Lynx habitat currently in an unsuitable condition on all ownerships

LAU	Total Lynx Habitat on all ownerships (acres)	Currently Unsuitable ¹		Currently suitable ²	
		acres	%	Acre	%
20	39340	9514	24.2%	29826	75.8%
21	34977	10117	28.9%	24860	71.1%

Data source: Lynx dashboard tool, Chippewa NF, using forest data and Arc View, 5/2010
Other Footnotes: ¹Unsuitable lynx habitat = private acres + young forest that has not developed sufficiently to support snowshoe hare populations throughout the year. The large majority of unsuitable habitat is attributable to private lands.
²Suitable lynx habitat = early successional forest with coarse woody debris, older forest with a substantial understory of shrubs and young conifer, and upland or lowland shrub lands. Suitable lynx habitat with adequate canopy cover = upland forest >4 years and lowland forest >9 years old.

Indicator 12: Cumulative change to unsuitable condition on NFS lands.

This indicator is used to measure S-WL-1 which states that management activities on NFS lands shall not change more than 15% of lynx habitat on NFS lands within an LAU to an unsuitable condition within a 10-year period.

Indicator 12: Cumulative change to unsuitable habitat condition in 10 years on NFS lands

LAU	Lynx Habitat Acres on NFS	Alternative A (no action)			Alternative B			Alternative C		
		Present actions	Total change to unsuitable		Proposed change	Total changed to unsuitable		Proposed change	Total change to unsuitable	
		Ac	Ac	%	Ac	Ac	%	Ac	Ac	%
20	28,919	1880	1880	6.5%	541	2421	8.4%	541	2421	8.4%
21	28,965	177	177	<1%	394	571	2.0%	394	571	2.0%

Data source: Lynx dashboard tool, Chippewa NF, using forest data and Arc View, 5/2010
Other Footnotes: LAU 20 and 21 present actions include Leech Lake River Project and Boy River 2 Project.

Indicator 3: Denning Habitat

Lynx Analysis Units	Existing Condition			Acres of habitat patches (>5 ac) removed and % of habitat remaining					
	Forested Lynx Habitat	Denning habitat in patches		Alternative A (no action)		Alternative B		Alternative C	
	Acres	Acres	%	Acres	%	Acres	%	Acres	%
20	30468	10437	34.3%	10718	35.2%	10421	34.2%	10421	34.2%
21	25344	8632	34%	9481	37.4%	9092	35.9%	9092	35.9%

Data source: Lynx dashboard tool, Chippewa NF, using forest data and Arc View, 5/2010
Other Footnotes: based on the percentage of forested lynx habitat in suitable denning habitat

Indicator Foraging 1a: Snowshoe Hare Habitat

Lynx Analysis Units	Existing Condition		Acres and Percent of habitat after project implementation					
	Snowshoe Hare Habitat		Alternative A (no action)		Alternative B		Alternative C	
	Acres	%	Acres	%	Acres	%	Acres	%
20	20,235	66%	19200	63%	18877	62%	18877	62%
21	16,805	66%	15977	63%	15597	62%	15597	62%

Data source: Lynx dashboard tool, Chippewa NF, using forest data and Arc View, 5/2010
Other Footnotes: based on the percentage of forested lynx habitat in hare habitat

Indicator Foraging 2: Red Squirrel Habitat

Lynx Analysis Units	Existing Condition		Acres and Percent of habitat after project implementation					
	Red Squirrel Habitat		Alternative A (no action)		Alternative B		Alternative C	
	Acres	%	Acres	%	Acres	%	Acres	%
20	8,293	27%	8691	29	8655	28	8655	28
21	8,708	34%	8956	35	9165	36	9165	36

Data source: Lynx dashboard tool, Chippewa NF, using forest data and Arc View, 5/2010
Other Footnotes: based on the percentage of forested lynx habitat in red squirrel habitat

Lynx Habitat – Human disturbance/Access Indicators

Indicator 15 below is used to measure G-WL-8 which states that within LAUs generally maintain road and snow-compacting trail densities below 2 miles per square mile to maintain the natural competitive advantage of lynx in deep snow. Where total road and regularly-used snow-compacting trail densities are greater than 2 miles per square mile and coincide with lynx habitat, prioritize roads for seasonal restrictions or reclamation in those areas, where practical or feasible. In this guideline “roads” include all ownerships of classified and unclassified roads and “regularly-used trails” are those that are used most years for most of the snow season.

Indicator 15: Road and snow-compacted Trail Density

Lynx Analysis Units	Land Area sq. mi	Existing Condition		Alternative A		Alternative B		Alternative C	
		miles	mi/mi	miles	mi/mi	miles	mi/mi	miles	mi/mi
20	79.0	164 ¹	2.1	157.6 ²	2.0	154.9	2.0	154.9	2.0
21	79.8	189 ¹	2.4	179.5 ²	2.3	174.3	2.2	173.7	2.2

Data source: Intersect of LAUs 20 and 21, roads layer (2009), and the Moon road proposal (5/2010) in Arc Map.
Other Footnotes: All ownerships within LAUs 20 and 21, road reductions attributable to the Moon Project only.
¹ Road density after proposed road obliterations in the Boy River 2 Project Area.
² Alternative A (No Action) includes the potential obliteration of ‘unclassified’ or non-system roads in the Moon Project Area as a result of the Forest Plan decision in 2004.

Indicators 13 and 7 below demonstrate the effects of the action alternatives on changing amounts of temporary, OML 1, and OML 2 roads within the affected LAU in the project area on NFS lands.

Indicator 13: Total miles of roads to be decommissioned and new OML 1 roads to be closed

LAU	Alternative A	Alternative B			Alternative C		
	Total	Dec.	OML 1	Total	Dec.	OML 1	Total
20	6.4 ¹	9.1	0.2	9.3	9.1	0.2	9.3
21	9.5 ¹	14.7	0.7	15.4	15.3	0.7	16.0

Data source: Intersect of LAUs 20 and 21 with roads layer (2010), and the Moon road proposal (5/2010) in Arc Map.
Other Footnotes: All ownerships within LAUs 20 and 21, all road OML classes included in the totals, road reductions attributable to the Moon Project only, and Trail miles not included. Note: An additional 4 miles of road has been decommissioned or closed in LAU 20 as a result of other decisions.
¹ Alternative A (No Action) includes the potential obliteration of ‘unclassified’ or non-system roads in the Moon Project Area as a result of the Forest Plan decision in 2004.

Indicator 7: Miles of temp and OML 1 & 2 roads by alternative in LAUs 20 and 21 within the Moon Project Area, Walker RD.												
LAU	Alt A				Alt B				Alt C			
	Temp	OML 1	OML 2	total	Temp	OML 1	OML 2	total	Temp	OML 1	OML 2	total
20	0	15.4 ¹	50.2	65.6	0.46	8.1	48.7	57.3	0.46	8.1	48.7	57.3
21	0	19.9 ¹	60.7	80.6	0.59	12.6	55.6	68.8	0.59	12.6	55.6	68.8

Data source: Intersect of LAU layer, roads layer, and the Moon road proposal in Arc Map.
Note: Alternative B and C totals include closures and obliteration from past decisions including the 2008 OHV decision and Leech Lake River (2005).
¹ Alternative A (No Action) includes the potential obliteration of ‘unclassified’ or non-system roads in the Moon Project Area as a result of the Forest Plan decision in 2004.

Existing road density for all roads is 2.1 miles/square mile in LAU 20 (table indicator 15) and 2.4 miles/square mile in LAU 21. All LAUs are above the 2 miles/square mile density threshold. Alternatives B and C are identical in the proposed reductions of OML 1 and 2 roads (table indicator 7). The resulting road density while reduced remains above the threshold in these LAUs. Under Alternative A (No Action) road density is shown to be reduced from the Existing Condition to reflect the potential obliteration of non-system unclassified roads under the 2004 Forest Plan decision. About 15.9 miles of unclassified roads would potentially be obliterated under all alternatives among all LAUs. These miles are included in OML 1 totals in Indicator 7, and “decommission” totals in Indicator 13 above.

Alternatives B and C require the construction of 1.2 miles of temporary roads in order to access timber harvest units; these roads would be effectively closed following activity completion.

As shown in the indicator tables for road and trail densities, Alternatives B and C are the same in how they potentially affect road densities through road obliteration.

The primary differences between Alternative B and C are:

- the number of miles changed to 'open to all vehicles' (highway licensed vehicles and off-highway vehicles) where they are currently open only to highway licensed vehicles.
- the number of miles changed to 'closed to all vehicles' where they are currently open to highway licensed vehicles.
- the number of miles changed to 'open only to snowmobiles' where they are currently open to highway licensed vehicles.

Since these proposed changes do not obliterate existing roads, they would not change the road density within the project area. These changes are meant to refine the 2007 Off Highway Vehicle Road Travel Access Decision signed by Forest Supervisor Rob Harper. The purpose was to identify designated roads for off highway vehicle use on the CNF in concert with the goals and objectives outlined in the Forest Plan and to comply with the 2005 Travel Management Rule that required a designated route system for motor vehicle use by vehicle class and if appropriate, by time of year.

Alternative B would close 18.5 miles of roads to all vehicles. Alternative C would close 16.1 miles of roads to all vehicles. Closures would be accomplished by gates, rocks, or similar structures.

Alternative B would open 7.6 miles of system roads to OHV use. Alternative C would open 9.7 miles of system roads to OHV use. These roads are currently open only to highway licensed vehicles.

Alternative C would designate 'snowmobile only' use on 6.9 miles of system roads currently open to highway licensed vehicles. Alternative B would not change any roads to 'snowmobile only' use.

It is not clear if the changes in road status proposed by each Alternative represent declines or improvements in conditions that favor the Canada lynx. While road closures are potentially a good thing for species like the lynx or the gray wolf, it is not clear if road closures can be enforced in the long term. Illegal off-highway vehicle use is widespread in the project area. The miles of illegal OHV trails are not reflected in the road/trail densities shown in the table for indicator 15, nor are they fully known. I observed illegal OHV trails or signs of illegal use in nearly every corner of the Moon Project Area in 2010. Because of this, it appears improbable that proposed closures will be effective.

The Chippewa NF does not appear to have a cost effective and socially acceptable way of closing roads. Tree drops on road were used in 2008 and 2009. However, internal and external opposition to this method caused the Chippewa to put a moratorium on tree drops for closures in 2010. Two segments of unclassified roads were reopened in 2009 following complaints from some members of the public. Rock closures are being completed on a more limited basis. Some closures/obliterations are being completed using heavy equipment. Both of these methods are expensive compared to tree drops or

use of logging debris to close roads. While the Moon Project and other recent projects state that a significant amount of road closure and obliteration would be completed on the Chippewa, it is not clear when or how these changes to the transportation system will be made.

Monitoring of road closures across the Chippewa in 2006 and 2007 (Chippewa M&E Report for 2007) showed only about 62% effectiveness against illegal use.

The Moon Project Area is popular with OHV users. The Soo Line ATV trail bisects the project area. There was significant opposition to the Moon transportation proposal from ATV groups during the public scoping phase of the Moon Project.

In terms of the potential future road density of inventoried roads in the Moon Project Area, it appears the transportation proposal for the action alternatives helps to improve the project area for the lynx. However, the road density indicators do not quantify the miles or the effect of illegal cross-country OHV trails. Despite reductions in road density, federal lands in the project area will remain highly accessible by system roads and trails, or illegal trails.

The action alternatives are moving the portions of the LAUs within the Moon project area towards the 2 miles/square mile road threshold for inventoried roads. Overall road density would remain over the threshold and roads may continue to adversely affect the lynx in this LAU for the foreseeable future. This continued adverse effect was analyzed and accounted for in the programmatic BA for the Chippewa Forest Plan. The reduction of road density from existing condition would benefit the lynx.

C. Consistency with Forest Plan:

Forest Plan Guidance	Direction	Alts In Compliance	Basis for Compliance	Remarks
O-WL-4	Maintain or improve habitat	B, C	Improve road density, maintenance of habitat above thresholds and maintain or improve forest habitat for prey species	
O-WL-5	Seek opportunities to benefit TE spp.	B, C	Road density would potentially be reduced	
O-WL-6	Reduce or eliminate adverse	B, C	Road density would potentially	

Forest Plan Guidance	Direction	Alts In Compliance	Basis for Compliance	Remarks
	effects to TE		be reduced	
O-WL-7	Minimize building or upgrading roads in TE areas	B, C	Road density would potentially be reduced	
O-WL-8	Promote the conservation and recovery of Canada lynx	B, C	Road density would potentially be reduced	
O-WL-9	Manage for hare and alt prey habitat	All	Hare habitat would be maintained at an adequate level	
O-WL-10	Provide foraging habitat in proximity to denning habitat	All	All alternatives maintain the mix of foraging to denning habitat	
O-WL-11	Maintain habitat connectivity to reduce road mortality	All	Existing connectivity would be essentially maintained, road density would remain above the threshold	
O-WL-12	Participate in efforts to identify, map, and maintain linkage areas	N/A	Project proposals were not specifically designed to accomplish this within project LAUs.	Large mature/older forest patches would be maintained or increased over time and contribute to linkages.
O-WL-13	Maintain competitive advantage of lynx in deep snow	B, C	Road density would potentially be reduced	
O-WL-14	Participate in efforts to reduce lynx mortality on roads	N/A	While road density would potentially be reduced in action Alts, this objective did not drive either action Alt.	

Forest Plan Guidance	Direction	Alts In Compliance	Basis for Compliance	Remarks
G-WL-1	Moderate timing and intensity of mgt activities to maintain lynx habitat	B, C	Given the size and duration of the project, the action alternatives would accomplish this guideline.	
G-WL-2	Provide protection of known den sites	All	If den site(s) become known, it would be protected	
G-WL-3	No more than 30% of an LAU in unsuitable condition	All	All alternatives remain below the 30% threshold.	
S-WL-1	No more than 15% change to unsuitable in 10 years	All	All alternatives remain below the 15% threshold.	
G-WL-4	Maintain at least 10% denning habitat	All	All alternatives would maintain more than 10% denning habitat.	
G-WL-5	Following disturbance, retain at least 10%	N/A	No blowdown, fire, insect, or disease disturbance applies.	
S-WL-2	No net increase in groomed or designated over-the-snow trails	All	All alternatives meet this standard.	
G-WL-6	New over-the-snow routes should be designed to benefit lynx	N/A	No new routes are proposed.	
G-WL-7	Close trails and roads that intersect with new snow-compacting trails.	N/A	No new routes are proposed.	
G-WL-8	Maintain road density at or below 2mi/mi ²	All	Road density would potentially be decreased	Recent past decisions would potentially contribute to reductions.

Forest Plan Guidance	Direction	Alts In Compliance	Basis for Compliance	Remarks
			under all alternatives.	
G-WL-9	Do not upgrade or pave dirt or gravel roads	N/A		No upgrades or paving are proposed.

D. Determination of Effect

Alternative	Determination	Summary of Rationale
Alternative A	Not likely to adversely affect Canada lynx or its habitat.	Habitat would remain unchanged, but recent decisions would reduce road densities for both system roads and unclassified roads.
Alternative B	Not likely to adversely affect Canada lynx or its habitat	Habitat for snowshoe hare would be maintained at an adequate level and red squirrel habitat would be improved over existing condition. Road density reductions may improve lynx habitat. Key thresholds of disturbance would not be met within LAUs that intersect the project area.
Alternative C	Not likely to adversely affect Canada lynx or its habitat	Habitat for snowshoe hare would be maintained at an adequate level and red squirrel habitat would be improved over existing condition. Road density reductions may improve lynx habitat. Key thresholds of disturbance would not be met within LAUs that intersect the project area.

6.0 Mitigations

Mitigation	Alternatives	Risk Factor addressed
'none proposed'		

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7.0 Monitoring

The Forest Plan identifies three monitoring elements related to threatened and endangered species (Chapter 4, Table MON-4):

- To what extent is Forest management contributing to the conservation of threatened and endangered species and moving toward short term (10-20 years) and long-term (100 years) objectives for their habitat conditions and population trends?
- To what extent are road and trail closures effective in prohibiting unauthorized motor vehicle use?
- To what extent is the Forest maintaining no net increase in groomed or designated over-the-snow trail routes unless the designation effectively consolidates use and improves lynx habitat through a net reduction of compacted snow areas?

Additional Monitoring Elements: None recommended

8.0 Signature

Conducted by: /s/ *James A. Gallagher* Date: 7/7/2010
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9.0 References

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